Claims

This listing of claims will replace all prior versions and listings of claims in the application:

1. **(Currently amended)** A method for analyzing specified properties of a set of samples, the method comprising:

   a. providing a platen having two substantially parallel planar surfaces, an inner layer of hydrophilic material, two outer layers of hydrophobic material coupled to opposite sides of the inner layer, and a two-dimensional array of a plurality of addressable through-holes, the through-holes being disposed substantially perpendicularly to the planar surfaces and the array characterized by an areal density of at least 1.6 through-holes per square millimeter;

   b. loading a first sample into a first set of through-holes of the two-dimensional array, the first sample being a liquid;

   c. retaining the first sample in the first set of through-holes by surface tension;

   d. adding a second sample into a specified subset of through-holes, the specified subset of through-holes having at least one adjacent through-hole containing a sample other than the second sample, the specified subset of through-holes further coinciding with one of the first set of at least one of the though-holes thereby permitting a reaction between the first sample and the second sample, wherein the layers of hydrophobic material prevent capillary outmigration of the samples; and

   e. characterizing the reaction in the specified subset of through-holes in terms of the specified properties.

2. **(Original)** A method according to claim 1, wherein each through-hole is dimensioned so as to maintain a liquid sample therein by means of surface tension.

3. **(Original)** A method according to claim 1, wherein each through-hole has a volume less than 100 nanoliters.

4. **(Original)** A method according to claim 1, wherein the plurality of addressable through-holes has a density in excess of 10^8 per square meter.

5. **(Previously presented)** A method according to claim 1, wherein the first sample in liquid form includes at least one of a target in solution and a target in suspension.

6. **(Previously presented)** A method according to claim 1, wherein at least one of a target in solution and a target in suspension includes a biological material.

7. **(Previously presented)** A method according to claim 1, wherein the step of loading a first sample includes drawing the sample from a planar surface by capillary action.

8-10. (Canceled)

11. **(Previously presented)** A method according to claim 1, further including maintaining a humid atmosphere for preventing evaporation of the first sample.

12. **(Previously presented)** A method according to claim 1, further including coating the liquid sample with a monolayer for preventing evaporation of the first sample.

13. **(Original)** A method according to claim 1, wherein the step of characterizing the reaction in the through-hole in terms of the specified properties includes optically analyzing the sample.

14-15. (Canceled)

16. **(Currently amended)** A method ~~for analyzing a plurality of samples~~ according to claim 1, the method further comprising:

~~d. loading the samples into a plurality of through-holes disposed in a platen in a two-dimensional array characterized by an areal density of at least 1.6 through-holes per square millimeter;~~

~~e~~f. illuminating a set of more than one of the plurality of through-holes with optical radiation; and

~~f~~g. separately analyzing the optical radiation emanating from each through-hole of the set of more through-holes than one using an optical arrangement including a detector array.

17. (Previously presented) A method in accordance with claim 16, wherein the step of analyzing includes spectrally characterizing the optical radiation emanating from ~~the at least one~~ each through-hole.

18-44. (Canceled)